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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,338

09/30/2003

Daoqiang Lu

42P16662

7151

8791

7590

07/01/2005

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EXAMINER

EVERHART, CARIDAD

ART UNIT

PAPER NUMBER

2891

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/676,338	<b>Applicant(s)</b> LU, DAOQIANG	
	<b>Examiner</b> Caridad M. Everhart	<b>Art Unit</b> 2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks, et al. (US 2002/0195687A1) in view of Dershem et al (US 5,718,941) further in view of Kulesza, et al (US 5,887,345).

Brooks, et al discloses an integrated circuit device on a semiconductor substrate(Fig. 2 shows gates of a semiconductor device), a first dielectric material 27 (paragraph 0017) and a different second material which is a polymer which is a polycyanurate 30(paragraph 0016). The modulus is with the recited range(paragraph 0021). Brooks, et al is silent with respect to the glass transition temperature and the decomposition temperature.

Dershem et al teach the decomposition temperature of cyanate polymers(col. 3,lines 5-23).

Kulesza, et al teach the glass transition temperatures of cyanate ester resins or polymers(col. 12, lines 40-50).

It would have been obvious to one of ordinary skill in the art that the cyanate polymer taught by Brooks, et al would have have decomposition temperature and glass transition temperature in the recited ranges because these are disclosed by Dershem et

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al and Kulesza et al to be known ranges of decomposition temperature and glass transition temperature for known cyanate polymers.

Claims 5-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al in view of Dershem et al and further in view of Kulesza et al as applied to claim 1 above, and further in view of Carter, et al US 6,093,636).

Brooks et al in view of Dershem et al further in view of Kulesza et al does not teach the heating .

Carter, et al discloses forming layers over a substrate which includes circuit devices(col. 3, lines 21-25 and 31-35). The substrate can include an underlayer of insulation(col. 3, lines 35-37), which satisfies the limitation of depositing a first dielectric layer. The second dielectric material comprises polycyanurates(col. 3, lines 52-57). The layer is thermally treated at a temperature higher than the thermal decomposition temperature(col. 21, lines 3-17). It is implied that there can be a further dielectric layer formed, in the disclosure that there will be subsequent processing(col. 22, lines 50-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention that the device and process taught by Brooks et al in view of Dershem et al further in view of Kulesza et al could be combined with the device and process taught by Carter, et al. in which there are devices in the substrate layer because the polymer layers taught by Brooks et al in view of Dershem et al further in view of Kulesza et al have properties that can protect underlayers which include devices as well as metal circuit lines and because Carter et al teaches their usefulness in a device and process in which devices are included in the substrate layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caridad M. Everhart whose telephone number is 571-272-1892. The examiner can normally be reached on Monday through Fridays 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
CARIDAD EVERHART  
PRIMARY EXAMINER

C. Everhart  
6-24-2005